Complete Summary

GUIDELINE TITLE

Procedure guideline for hepatobiliary scintigraphy.

BIBLIOGRAPHIC SOURCE(S)

Society of Nuclear Medicine. Procedure guideline for hepatobiliary scintigraphy. Reston (VA): Society of Nuclear Medicine; 2001 Jun 23. 10 p. (Society of Nuclear Medicine procedure guidelines; no. 3.0).

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Hepatobiliary disease, including acute cholecystitis, chronic biliary tract disorders, common bile duct obstruction, biliary leak, biliary atresia, and congenital abnormalities of the biliary tree

GUIDELINE CATEGORY

Diagnosis
Evaluation

CLINICAL SPECIALTY

Nuclear Medicine
Radiology

INTENDED USERS

Allied Health Personnel
Physicians

GUIDELINE OBJECTIVE(S)

To assist nuclear medicine practitioners in recommending, performing, interpreting, and reporting the results of hepatobiliary scintigraphy

TARGET POPULATION

Adults or children with hepatobiliary disease

INTERVENTIONS AND PRACTICES CONSIDERED

Hepatobiliary scintigraphy

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Relevant guidelines from other organizations were reviewed and taken into consideration. Literature searches were performed to include current scientific evidence. In addition, references known to experts and references from the nuclear medicine community were considered.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Drafts of the guideline were submitted to members of the Guideline Development subcommittee (methodologists) and the Task Force (subject experts). These reviewers indicated on a line-by-line basis any suggestions or recommendations for the revision of the guideline. The percentage of agreement for all reviewers was calculated for each revision and compiled by the Society of Nuclear Medicine (SNM) central office. It is expected that the percentage of agreement will increase with each revision.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

When the Task Force and Guideline Development Subcommittee completed their edits, draft procedure guidelines were distributed to the Society of Nuclear Medicine (SNM) Sample Review Group for comment. (The SNM Sample Review Group is a cross-section of approximately 100 nuclear medicine practitioners representing every field of specialization).

The guideline was approved by the SNM Commission on Health Care Policy, the Board of Directors, and the House of Delegates.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Background Information and Definitions

Hepatobiliary scintigraphy is a radionuclide diagnostic imaging study that evaluates hepatocellular function and patency of the biliary system by tracing the production and flow of bile from the liver through the biliary system into the small intestine. Sequential images of the liver, biliary tree and gut are obtained. Computer acquisition and analysis as well as pharmacological interventions are frequently employed.

Common Indications

- Functional assessment of the hepatobiliary system
- Integrity of the hepatobiliary tree

These broad categories include:

- Evaluation of suspected acute cholecystitis
- Evaluation of suspected chronic biliary tract disorders
- Evaluation of common bile duct obstruction
- Detection of bile extravasation
- Evaluation of congenital abnormalities of the biliary tree

Procedure

The detailed procedure recommendations in the guideline address the following areas: patient preparation; information pertinent to performing the procedure (i.e., important data that the physician should have about the patient at the time the exam is performed and interpreted); precautions; information regarding the radiopharmaceutical (i.e., ranges of administered activity, organ receiving the largest radiation dose, effective dose), image acquisition; interventions; processing; interpretation criteria; reporting; quality control, and sources of error.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence for the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

The intent of the procedure guideline is to describe hepatobiliary scintigraphy, in order to maximize the diagnostic information obtained in the study while minimizing the resources that are expended.

POTENTIAL HARMS

False positive and false negative study results associated with hepatobiliary scintigraphy

The causes of a false-positive study (gallbladder non-visualization in the absence of acute cholecystitis) include:

- Insufficient fasting (<2 to 4 hours)
- Prolonged fasting (>24 to 48 hours), especially total parenteral nutrition (despite Sincalide pre-treatment and morphine augmentation)
- Severe hepatocellular disease
- High grade common bile duct obstruction
- Severe intercurrent illness (despite sincalide pre-treatment and morphine augmentation)
- Pancreatitis (rare)
- Rapid biliary-to-bowel transit (insufficient tracer activity remaining in the liver for delayed imaging
- Severe chronic cholecystitis
- Previous cholecystectomy

The causes of a false-negative study (gallbladder visualization in the presence of acute cholecystitis) are rare, but include:

- Bowel loop simulating gallbladder (drinking 100-200 ml water may remove the radiopharmaceutical from the duodenum and allow differentiation of gall bladder from bowel).
- Acute acalculous cholecystitis
- The presence of the "dilated cystic duct" sign simulating gallbladder. If this sign is present, morphine should not be given.
- Bile leak due to gallbladder perforation
- Congenital anomalies simulating gallbladder
- Activity in the kidneys simulating gallbladder or small bowel (may be clarified by a lateral image).

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The Society of Nuclear Medicine has written and approved guidelines to promote the cost-effective use of high quality nuclear medicine procedures. These generic recommendations cannot be applied to all patients in all practice settings. The guidelines should not be deemed inclusive of all proper procedures or exclusive of other procedures reasonably directed to obtaining the same results. The spectrum of patients seen in a specialized practice setting may be quite different than the spectrum of patients seen in a more general practice setting. The appropriateness of a procedure will depend in part on the prevalence of disease in the patient population. In addition, the resources available to care for patients may vary greatly from one medical facility to another. For these reasons, guidelines cannot be rigidly applied.

Advances in medicine occur at a rapid rate. The date of a guideline should always be considered in determining its current applicability.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Society of Nuclear Medicine. Procedure guideline for hepatobiliary scintigraphy. Reston (VA): Society of Nuclear Medicine; 2001 Jun 23. 10 p. (Society of Nuclear Medicine procedure guidelines; no. 3.0).

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Feb (updated 2001 Jun 23)

GUIDELINE DEVELOPER(S)

Society of Nuclear Medicine, Inc - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of Nuclear Medicine (SNM)

GUIDELINE COMMITTEE

Guideline Task Force

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. This guideline updates a previously released version: Procedure guideline for hepatobiliary scintigraphy. Reston (VA): Society of Nuclear Medicine; 1999 Feb. 16 p (Society of Nuclear Medicine Procedure Guidelines; version 2.0).

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Society of Nuclear Medicine (SNM) Web site.

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: ServiceCenter@snm.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Society of Nuclear Medicine. Procedure guideline for guideline development. Reston (VA): Society of Nuclear Medicine; 2001 Jun (version 3.0).

  Electronic copies: Available from the Society of Nuclear Medicine Web site.

- Society of Nuclear Medicine. Performance and responsibility guidelines for NMT. Reston (VA): Society of Nuclear Medicine; 2003.

  Electronic copies: Available from the Society of Nuclear Medicine Web site.

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: ServiceCenter@snm.org.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on July 20, 1999. It was verified by the guideline developer as of August 5, 1999. This updated summary was completed by ECRI on November 17, 2001. It was verified by the guideline developer as of November 27, 2001.

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